

6.0 NOISE

This section evaluates both temporary noise impacts and long-term noise impacts relating to the Proposed Project and project/action alternatives. Section 6.1, Environmental Setting, presents noise conditions typical of the project area, and contains Federal, State, and local noise regulations that are applicable to the project/action alternatives. Section 6.2, Environmental Impacts and Consequences, presents a discussion of the noise impacts from the proposed action and project/action alternatives, and mitigation commitments for those impacts.

6.1 Environmental Setting/Affected Environment

6.1.1 Overview of Sound Measurement

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is unwanted sound. Sound is characterized by various parameters that describe the rate of oscillation of sound waves, the distance between successive troughs or crests, the speed of propagation, and the pressure level or energy content of a given sound. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. The noise level perceived by a receptor depends on the following parameters:

- distance between the noise source and the receptor;
- presence or absence of absorptive noise barriers;
- the amount of noise-mitigating features between the receptor and noise source including intervening terrain, structures, foliage, and ground cover;
- cumulative noise impacts from reflective surfaces such as building facades, concrete and asphalt, water bodies, etc; and
- current weather conditions (snow, wind, rain) and weather-related ground cover (snow, mud, wet or dry ground).

Noise level (volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz). In addition to the instantaneous measurement of sound levels, the duration of sound is important. Sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers duration as well as sound power level is the equivalent noise level (L_{eq}). The L_{eq} is defined as the steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual time-varying levels over a period of time. Typically, L_{eq} is summed over a one-hour period.

The sound pressure level is measured on a logarithmic scale with the zero dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Decibels cannot be added arithmetically, but rather are added on a logarithmic basis. A doubling of sound energy is equivalent to an increase of three dB

and a sound that is 10 dB less than another does not increase the overall sound level. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a three dB change in community noise levels is noticeable, while one to two dB changes generally are not perceived.

Community noise levels are widely variable over time due to varying human activities. Community noise levels depend on the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In rural and undeveloped areas, the day and night average sound level (L_{dn}) noise levels can be below 35 dBA. Levels above 75 dBA are more common near major freeways and airports. Although people often accept the higher levels associated with very noisy urban areas, they are, nevertheless, considered to be adverse to public health.

Noise that occurs at night tends to be more disturbing than that which occurs during the daytime. The noise equivalent level recognizes this characteristic by weighting the hourly L_{eq} over a 24-hour period. The weighting involves the addition of 10 dB to noise occurring at night (10 p.m. to 7 a.m.) and an additional five dB added to noise occurring during evening hours (7 p.m. to 10 p.m.). This accounts for the greater amount of disturbance associated with noise at this time period.

Surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. In rural and undeveloped areas away from roads and other human activity, the day-to-night difference is normally small. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. Nighttime noise is a concern because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in sleep interference. At 70 dBA, sleep interference effects become considerable (USEPA 1974). Project activity is not expected to occur at night.

6.1.2 Critical and Sensitive Receptor Assessment

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, and libraries are most sensitive to noise intrusion. These areas have more stringent noise exposure targets than manufacturing or agricultural areas that are not subject to impacts such as sleep disturbance.

A critical receptor assessment was conducted for the noise impact analysis and is summarized in this section. Critical receptors are identified as essential public services, public administration facilities, medical facilities, nursing homes, and schools. Sensitive receptors within the project area may include private homes, campgrounds, resorts, and commercial/retail properties around Lake Davis. These do not include ecologically sensitive receptors.

Sensitive receptors in the project area within a 0.5-mile radius of each noise monitoring location and potential staging area are presented in Table 6.1-1 below. There are no critical receptors within a one-mile radius of the resort/dam area, or within a five-mile radius of the approximate center of Lake Davis.

Table 6.1-1. Critical and Sensitive Receptors

Receptor Type And Category		Name/Location/ Address (If Applicable)	Distance and Direction Relative from Monitoring Location ID
Category	Type		
Critical	Hospitals and Medical Facilities	None Identified	NA
Critical	Police Stations	None Identified	NA
Critical	Fire Stations	None Identified	NA
Critical	Government Administration	None Identified	NA
Critical	Nursing Homes	None Identified	NA
Critical	Elementary Schools and Daycare Centers	None Identified	NA
Critical	Junior and Senior High Schools	None Identified	NA
Critical	Universities, Colleges, and Vocational Schools	None Identified	NA
Sensitive	Parks and Recreation Areas	Grizzly Campground	North of Location #2 (900 feet)
Sensitive	Parks and Recreation Areas	Grasshopper Flat Campground	North of Location #2 (500 feet)
Sensitive	Parks and Recreation Areas	Lightning Tree Campground	Beyond 2 miles from Locations #1 and #2
Sensitive	Commercial/Retail	Lake Davis Resort	Location #1 on Property

Notes:

NA Not Applicable

Population and housing units were estimated using LandView[®] 6 and are based on the 2000 Census. Housing units and populations of concern are those within a five-mile radius of the center of Lake Davis according to LandView[®] 6, and are estimated at 24 units and 90 people, respectively. See also figures 14-2 and 14-3 in Section 14, Human and Ecological Health Concerns, for the location of sensitive population and land uses within the project area and vicinity. Figure 14-2 estimates the potential population within 3,280 feet (1,000 meters) of Grizzly Valley Dam to be 78 people.

6.1.3 Existing Sources and Conditions

The environmental setting represents the existing condition for the resource or environmental issue. The Lake Davis project area is rural and generally quiet, punctuated by sounds generated by recreation and timber harvesting activities, wildlife, and seasonal weather. Sounds from human activities include motor vehicle operations (e.g., automobiles and trucks, motorcycles, snowmobiles, and power boats), electrical power generators, chainsaws, and firearms (e.g., rifles and shotguns during hunting season). Seasonal weather sounds include wind and thunder. The amount and incidence of noise varies with changes in access to the area and during hunting seasons. Intermittent noise is present throughout the year and at all locations within the project area.

Activities at Lake Davis are primarily recreational in nature. These activities produce both mobile and stationary source noise emissions. Baseline ambient noise monitoring was

conducted at Lake Davis on Sunday, June 11, 2006. Data quantify representative sound levels associated with activities in areas closest to sensitive receptors.

Ambient noise values are used in the impacts analysis to compare noise sources and sound levels associated with the project/action alternatives and to determine whether proposed project activities would exceed noise criteria established by Federal, State, and local laws, ordinances, and regulations.

6.1.3.1 Stationary Sources

Stationary noise sources within the project vicinity include roof-top and window-mounted heating, ventilation, and cooling systems; air compressors; generators; campground noise; and boat-ramp activities. The noise associated with these sources may be a single-event noise occurrence, or continuous short-term or long-term noise, but is very localized as opposed to the more pervasive mobile sources.

6.1.3.2 Mobile Sources

Mobile noise sources within the project vicinity include vehicular traffic along Lake Davis Road, Grizzly Road, and minor arterial roadways, motor boats, air boats, recreational vehicle and firearm use, local construction, and harvest activities including commercial logging trucks, chainsaws, and other harvest related equipment.

6.1.3.3 Ambient Noise in the Project Area

Ambient noise levels listed in Table 6.1-2 provide a representative sample of ambient noise conditions in the vicinity of areas used by sensitive human receptors. These areas were chosen because they are assumed likely to be the sources of the highest noise levels during implementation of the Proposed Project or alternatives. Noise conditions are described in terms of the following:

- Equivalent Sound Level (L_{eq}), the average sound level calculated from instantaneous measurements recorded over a specific period of time;
- The maximum sound level (L_{max}) reached during a sampling period;
- The minimum sound level (L_{min}) reached during a sampling period; and
- Community Noise Equivalent (CNEL): the average of the daytime measurement, evening measurement +5 dBA, and night measurement +10 dBA.

The primary noise source in the project area is traffic noise on Lake Davis Road, Grizzly Road, and the Beckwourth/Taylorville Road/Grizzly Road (County Road 112) and campers. Secondary noise sources include recreational activities (e.g., motor boats, off-road vehicles) and residential noise sources (e.g., passenger vehicles, dogs, power tools, etc.).

Noise measurements are presented on Table 6.1-2. As indicated, the measured average ambient noise levels in the vicinity of the two monitoring stations ranged between 40 and 45 dB(A) L_{eq} in the day, 40 and 44 dB(A) in the evening, and 36.4 dB(A) in the night for the entire area.

As shown in Table 6.1-2, all noise measurements were taken between 4:43 p.m. and 10:00 p.m. on a Sunday. It is recognized that much of the daily activity, including all logging truck and other truck traffic and construction noise associated with timber harvest, would not have been included in measurements taken on Sunday afternoon and evening. This activity occurs primarily throughout the week and occasionally early in the day on weekends. In addition, many visiting recreational campers and boat users, as well as day-use visitors, may have left the reservoir and surrounding area prior to the survey times.

6.1.4 Regulatory Setting

The project is potentially subject to a variety of Federal, state, and local regulations pertaining to noise in the project area. Noise levels are governed by multiple agencies as discussed below.

6.1.4.1 Federal Standards and Guidelines

Bureau of Land Management – U.S. Forest Service

The Bureau of Land Management (BLM) – U.S. Forest Service (USFS) noise standard of 48.6 dBA is a 24-hour L_{eq} , 300 feet from the noise source. This means that individual sound pressure levels (SPL) taken at a point in time can exceed the numerical standard but when these individual SPL are averaged logarithmically over a 24-hour period, they must be below the standard of 48.6 dBA. Noise levels are not to exceed 48 dBA during the hours between 9 p.m. and 6 a.m. and 58 dBA during the remainder of the 24-hour period.

U.S. Environmental Protection Agency (USEPA)

The USEPA has developed guidelines on recommended maximum noise levels to protect public health and welfare (USEPA 1974). The USEPA does not enforce these regulations, but rather offers them as a planning tool for state and local agencies. Table 6.1-3 provides examples of protective noise levels recommended by the USEPA.

Office of Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) regulates exposure to occupational noise (29 CFR Section 1910.95) by limiting the interval of time a worker can be exposed to certain noise levels. These regulations list permissible noise exposure levels as a function of the amount of time to which the worker is exposed. For example, a worker should not be exposed to average sound levels of 90 dBA for over eight hours. When noise exposure exceeds this, employers should reduce exposure conditions with engineering or administrative methods. If exposure time cannot be reduced, personal protective equipment is required to reduce noise levels to permissible levels.

Table 6.1-2. Ambient Noise Levels Representative of the Project Area

Location Information			Monitoring Period/Time ¹		Leq in dB(A)	Lmax in dB(A)	Lmin in dB(A)	Field Notes and Noise Characteristics
Map ID	Description	Latitude Longitude	CNEL Period	Start/End Time				
1	Lake Davis Resort and vicinity, southeast portion of Reservoir, west-southwest of Grizzly Valley Dam	N39.8757 W120.4784	Day	17:26 to 17:55	45.1 45.1	67.5	29.3	Background noise impacted by campers and vehicular traffic (sporadic)
			Evening	19:07 to 20:07	44.2 49.2	63.3	28.2	Background noise impacted by campers and vehicular traffic (sporadic)
2	Grizzly Valley Dam Gauging Station, north of road	N39.8838 W120.4767	Day	16:43 to 17:10	43.1 43.1	61.7	32.6	Loudest noise events originated from diesel pick-up trucks along Lake Davis Road.
			Evening	19:34 to 19:54	40.3 45.3	58.6	30.4	No activity in area – very quiet.
			Night	22:00 to 22:00	36.4 45.3	58.4	34.0	No activity in area – very quiet

Notes:

1. Measurements were taken on June 11, 2006.

CNEL Community Noise Equivalent Level

L_{eq} Equivalent Sound Level, the integrated sound level calculated from the total number of instantaneous measurements recorded over a given interval.

L_{max} The maximum sound level recorded during a monitoring period.

L_{min} The minimum sound level recorded during a monitoring period.

Table 6.1-3. USEPA Designated Noise Safety Levels

Effect	Noise Level	Area
Hearing Loss	$L_{eq}(24) < 70$ dB	All areas.
Outdoor Activity Interference and Annoyance	$L_{dn} < 55$ dB	Residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) < 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, and playgrounds.
Indoor Activity Interference and Annoyance	$L_{dn} < 45$ dB	Indoor residential areas.
	$L_{eq}(24) < 45$ dB	Other indoor areas with human activities such as schools.

Source: USEPA, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, March 1974.

Notes:

$L_{eq}(24)$ = Represents the sound energy averaged over a 24-hour period.

L_{dn} = Represents the L_{eq} with a 10 dB nighttime weighting.

Draft National Bald Eagle Management Guidelines

Draft National Bald Eagle Management Guidelines (the Guidelines) apply to bald eagles in the event the species is no longer listed as threatened under the Federal Endangered Species Act (ESA). If delisted under ESA, bald eagles remain protected by the Bald and Golden Eagle Protection Act (BGEPA) and the Migratory Bird Treaty Act (MBTA). Therefore, certain human-caused impacts to bald eagles are still prohibited by law.

The U.S. Fish and Wildlife Service (USFWS) developed the Guidelines to advise landowners, land managers, and others who share public and private lands with bald eagles when and under what circumstances the protective provisions of the BGEPA may apply to them. The Guidelines will promote the continued conservation of the bald eagle following its removal from the Federal List of Endangered and Threatened Wildlife and Plants (protection under the ESA).

The Guidelines are intended to:

- Publicize the provisions of the BGEPA that continue to protect bald eagles, in order to reduce the possibility that people will violate the law;
- Advise landowners, land managers and the general public of the potential for various human activities to disturb bald eagles; and
- Encourage land management practices that benefit bald eagles and their habitat.

There are no general noise requirements or restrictions in the Guidelines. However, noise is mentioned as a factor in off-road vehicle use and blasting. In open areas, where there is increased visibility and exposure to noise, it is recommended that off-road vehicles not be operated within 660 feet of nest sites during nesting season.

The Guidelines' recommendations include avoidance of blasting and other activities that produce extremely loud noises within 0.5 miles of active nests (or within one mile in open areas), unless greater tolerance to the activity (or similar activity) has been demonstrated by eagles in the nesting area. This recommendation applies to the use of fireworks classified by

the U.S. Department of Transportation as Class B explosives, including the larger fireworks that are intended for licensed public display.

At the time of preparation of this EIR/EIS, bald eagles are listed under the ESA. The Biological Assessment prepared for this project (DFG 2006j) and consultation are the guiding criteria for the Bald Eagle.

14 CFR Volume 3 Part 150 Federal Aviation Administration

Airport Noise Compatibility Planning

Part 150 describes the procedures, standards, and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. It prescribes single systems for (a) measuring noise at airports and surrounding areas that generally provide a highly reliable relationship between projected noise exposure and surveyed reaction of people to noise; and (b) determining the exposure of individuals to noise that result from the operations of an airport. It also identifies those land uses that are normally compatible with various levels of exposure to noise by individuals. This information provides technical assistance to airport operators, in conjunction with other state and federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs.

6.1.4.2 State Standards and Guidelines

Land Use Compatibility

The California Government Code § 65302(f) encourages each local government entity to conduct noise studies and implement a noise element as part of their General Plan. In addition, the California Office of Planning and Research published guidelines (OPR 1998) for evaluating the compatibility of various land uses as a function of community noise exposure; these are listed in Table 6.1-4 below. In general, noise levels less than 60 dBA Ldn are acceptable for all land uses, including residences, schools, and other noise-sensitive receptors. The State considers noise levels less than 70 dBA Ldn to be normally acceptable for playgrounds and neighborhood parks (OPR 1998).

Table 6.1-4. Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	Community Noise Exposure – L _{dn} or CNEL in dBA							
	50	55	60	65	70	75	80	
Residential – Low Density Single Family, Duplex, Mobile Home								
Residential – Multi-Family								
Transient Lodging – Motel, Hotel								

Table 6.1-4. Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	Community Noise Exposure – L _{dn} or CNEL in dBA							
	50	55	60	65	70	75	80	
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Auditorium, Concert Hall, Amphitheaters								
Sports Arena, Outdoor Spectator Sports								
Playgrounds, Neighborhood Parks								
Golf Courses, Riding Stables, Water Recreation, Cemeteries								
Office Buildings, Business Commercial and Professional								
Industrial, Manufacturing, Utilities, Agriculture								
LEGEND								
	Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.							
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.							
	Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.							
	Clearly Unacceptable: New construction or development generally should not be undertaken.							

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration (Cal/OSHA) also regulates employee noise exposure, as mandated by CCR Title 8, Group 15, Article 105 §§ 5095-5100. Cal/OSHA stipulates the same requirements as OSHA (above). A Hearing Conservation Program must be instituted when employees are exposed to noise levels of an eight-hour time weighted average at or greater than 85 dBA.

California Vehicle Code

Noise from highway vehicles and off-highway equipment is regulated by the Department of Motor Vehicles with cooperation from the California Highway Patrol. Off-highway motor vehicles manufactured between 1975 and 1986 must not exceed 86 dBA. Those manufactured after 1986 must not exceed 82 dBA when measured at 50 feet from the centerline of travel (Vehicle Code Section 38370). Heavy highway vehicles manufactured after 1987 must emit less than 80 dBA (Vehicle Code Sections 27204 and 27206).

Department of Parks and Recreation General Plan

Statewide guidelines for General Plans published in 1984 indicate that levels under 70 Ldn should be acceptable to receptors in parks (DPR 1984).

Caltrans Division of Aeronautics

The California Department of Transportation's mission in aviation is to foster and promote the development of a safe, efficient, dependable, and environmentally compatible air transportation system. The State Aeronautics Act, Public Utilities Code (PUC) section 21001 et seq., is the foundation for the Department's aviation policies. The Division of Aeronautics issues permits for and annually inspects hospital heliports and public-use airports; makes recommendations regarding proposed school sites within two miles of an airport runway; and authorizes helicopter landing sites at/near schools. Aviation system planning provides for the integration of aviation into transportation system planning on a regional, statewide, and national basis. The Division of Aeronautics administers noise regulation and land use planning laws that foster compatible land use around airports and encourages environmental mitigation measures to lessen noise, air pollution, and other impacts caused by aviation. The Division of Aeronautics also provides grants and loans for safety, maintenance, and capital improvement projects at airports.

CCR Title 21, Noise Standards, Subchapter 6

Airport Noise Standards

The purpose of this regulation is to resolve existing noise problems in communities surrounding airports and to prevent the development of new noise problems. To accomplish this purpose, these regulations establish a quantitative framework within which various interested parties (i.e. airport proprietors, aircraft operators, local communities, counties, and state) can work together cooperatively to reduce and prevent airport noise problems.

6.1.4.3 Local Ordinances and Guidelines

Plumas County Municipal Code

Plumas County Municipal Code Title 9-2.413, Noise specifies that:

“New uses shall not increase off-site noise to a level which exceeds the ambient noise level for the specific land use area”

Plumas County General Plan Noise Element

The goal of the Plumas County General Plan Noise Element is to ensure that the location, density, and intensity of development within both prime and moderate opportunity areas is done so as to achieve reasonable safety from noise hazards and that “noise sensitive areas” are protected. Plumas County has developed plans to continue developing within specific density patterns. These areas are defined as Prime, Moderate, and Limited Opportunity. Table 6.1-5 provides general ambient outside noise levels within each subclassification, which are considered acceptable to the residences and occupants. These levels are expressed in dBA levels and should be updated to Ldn standards prior to utilization of those noise levels for enforcement or comparison purposes. The California Office of Noise Control has established a recommended standard for community noise environment (see Table 6.1-4). These standards are consistent with the existing Plumas County environment.

Table 6.1-5. Ambient Outside Noise Levels

Area	Average dBA	Range	Reason for Range
Core Commercial	75		
Periphery Commercial	66	63–70	Proximity to highway
Convenience Commercial	60		
Recreation	49	40–60	Proximity to highway
Industrial	63	50–70	Equipment in use
Limited Industrial	58	50–70	Proximity to highway
Multiple Family	52	50–53	Proximity to highway/industry
Single Family	50	40–60	Proximity to highway/industry
Suburban	48	34–60	Proximity to roads/industry; aircraft
Secondary Suburban winds	47	42–50	Proximity to roads/industry; aircraft
Prime Expansion winds, animals	43	40–50	Proximity to roads/industry; aircraft
Agricultural Buffer winds, animals	43	40–50	Proximity to roads/industry; aircraft
Rural winds, animals	43	40–50	Proximity to roads/industry; aircraft
Limited Opportunity winds, animals	43	33–55	Proximity to roads/industry; aircraft
Agricultural Preserve winds, animals	43	33–55	Proximity to roads/industry; aircraft
Important Agriculture winds, animals	43	33–55	Proximity to roads/industry; aircraft
Important Timber aircraft, winds	50	35–60	Proximity to roads/residences/streams
Mining streams, aircraft, winds	63	60–66	Proximity to roads/mining operations
Significant Wetlands	48		

Source: Office of Noise Control, California Department of Health.

Note: The ambient outside noise levels are expressed in dBA.

City of Portola General Plan Noise Element

Lake Davis is approximately five miles north of the City of Portola. While Lake Davis is outside of the City of Portola and therefore is not covered by the General Plan, it is included here for reference. The City of Portola General Plan Noise Element is mandated by the California Government Code (65302 (f)). The Noise Element addresses mobile noise sources and stationary noise sources and discusses policies and implementation for both.

Lake Davis Bald Eagle Habitat Management Area Plan

The purpose of the Lake Davis Bald Eagle Habitat Management Area Plan is to develop a management strategy for the Lake Davis Bald Eagle Habitat Management Area (BEHMA) that will provide sufficient suitable nesting and foraging habitat for bald eagles for the next 25 to 50 years. Noise is not addressed directly in this document; however, noise disturbance may be part of the general disturbance to the bald eagle and its habitat that is discussed.

For further discussion on potential impacts to wildlife from noise sources, please see Section 7.2, Wildlife Resources, of this EIR/EIS.

6.1.4.4 Construction-type Activity Noise Ordinance Requirements

Although this pike eradication project is not considered a construction project, equipment being proposed for the eradication is often used in construction projects. No construction-specific noise ordinances were identified, and typically public works and significant government construction operations are exempt from noise ordinance. Most administrators, however, attempt to comply with local ordinances, which typically require that construction work should occur during normal working hours and preferably not on the weekends or during holidays.

6.2 Environmental Impacts and Consequences

6.2.1 Evaluation Criteria and Environmental Concerns

The noise nuisance criteria are derived from local noise ordinances, state laws, and/or Federal regulations/standards. These criteria and a description of the noise simulation model and the assumptions applied to determine noise levels at critical receptors are presented in this section and in the Regulatory Setting section above.

Impacts are considered adverse and significant if the project noise levels exceed Federal, State or local regulations, or other applicable noise standards or promulgated regulations on the State or Federal level. For this analysis, impacts from noise would be considered significant if noise levels from the proposed project exceed the following criteria:

- Applicable local, State, and/or Federal standards, noise elements, or ordinances would be exceeded in noise level, timing, or duration. These include:
 - New uses shall not increase offsite noise to a level which exceeds the ambient noise level for the specific land use area (Plumas County Municipal Code Title 9, Section 2.413, Noise) Ambient outside noise levels are listed in Table 6.1-5.
 - USEPA noise standards (Table 6.1-3 provides examples of protective noise levels recommended by the USEPA).
 - USFS noise standard of 48.6 dBA over a Time-Weighted Average (TWA) of 24 hours.
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.
 - FAA FAR Part 150, A150.101 *Noise Contours and Land Usages* Section (d): “For the purpose of compliance with this part, all land uses are considered to be compatible with noise levels of less than DNL 65 Db.”

The CEQA Guidelines (Cal. Code Regs, Title 14, § 15000 et seq., Appendix G, § XI) explain that a significant adverse effect from noise may exist if a project would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

6.2.2 Evaluation Methods and Assumptions

6.2.2.1 Assumptions based on Initial Study

In 2005, a Project Description and Initial Study (Initial Study) was prepared that evaluated potential noise impacts to the six environmental factors prescribed by the California Environmental Quality Act (DFG 2005d). Based on Section XI, Noise of the Initial Study, any potential ground borne vibration would be mitigated by the “sound pressure attenuation in the water column.” This is based on presumed “shallow depth of groundwater immediately adjacent to the lake” The bedrock aquifer between Lake Davis and the City of Portola is comprised of (1) granite and inclusions of metamorphic “basement” rock, and (2) intrusive andesitic and basaltic volcanic rock. These rocks have relatively low hydraulic conductivity and low ability to transmit groundwater between the reservoir and the City of Portola. The specialty equipment required for the project is not classified as heavy construction equipment, and therefore would not be expected to result in ground borne vibration impacts. See Appendix B for the Initial Study.

6.2.2.2 Field Methodology and Instrumentation

To determine the current ambient noise conditions, sound monitoring data were logged two to three times per day in accordance with CNEL monitoring (Day, Evening, and Night) at two centralized locations. These locations were 1) representative of noise-sensitive receptors (Lake Davis Resort); and 2) in the vicinity of the most likely staging area.

Noise measurements for Day and Evening were recorded during four monitoring periods of approximately 20 to 60 minutes in order to quantify ambient background noise. The Night recording was an instantaneous measurement. The monitoring periods were completed during the day (two locations), evening (two locations), and night (one location) on June 11, 2006. The noise measurements were logged by the tripod-mounted sound meter at approximately 5 feet above ground. Field notes documented mobile/transient noise sources (vehicular and boat traffic) during each monitoring period that may impact the evaluation. Only one location was monitored at 10 p.m. due to the very low noise levels recorded, which were deemed representative of the entire area for that time period.

The noise measurements were conducted using a calibrated Quest 2900 and Quest QC-10 field calibrator. The sound level meter met the current American National Standards Institute (ANSI) standard for a Type 2 measurement.

6.2.3 No Project/No Action

No Project/No Action (No Project) represents a continuation of the existing reservoir and fishery management practices, as of September 2005, into the foreseeable future. These practices are consistent with the current, adopted plan to control pike. The goal of the current plan, known as the *Y2000 Plan* (DFG 2000), is to control the population of northern pike in Lake Davis and to keep the pike contained in the reservoir. There would be no forest closures, and recreation activity would continue similar to recent years. Because pike pose a serious threat to aquatic resources in California, if they are not eradicated from Lake Davis the DFG may decide to change the fisheries management program for the reservoir. Any significant changes to the fisheries management strategy at Lake Davis would be done in cooperation with the Lake Davis Steering Committee.

The No Project Alternative would have no adverse impact on noise.

6.2.4 Proposed Project/Proposed Action – 15,000 Acre-Feet (Plus Treatment)

6.2.4.1 Transportation and Staging

Transportation/hauling-related activities through the City of Portola and north along Lake Davis Road and County Road 112 would increase noise levels for receptors along these routes. Heavy trucks hauling chemicals and equipment/materials would pass within 200 feet of the Lake Davis Resort. Receptors would be temporarily affected by the increased noise. If the staging areas were along the east side of the reservoir, trucks would pass Grizzly Campground and Grasshopper Flat Campground. It is expected that one to three tractor-trailer units would be required to deliver all of the material to the staging area. Noise from the tractor-trailer would cease following delivery of materials until the trailer or empty barrels are picked-up by the tractor-trailer. Noise from the rotenone application would be ongoing at the staging area. However, this area would not be accessible to the public based on the implementation of the forest closures. In addition, the surrounding roads would be closed to the general public, which would result in a decrease in vehicle use on access roads and thus a decrease in noise along the main access roads to the reservoir.

Transportation/hauling to all staging areas and staging area mobilization would cause a potentially significant short-term impact to receptors south of the reservoir along Lake Davis Road. Mitigation measures would be appropriate for reducing impacts to receptors near roads to a less than significant level.

Impact N-1: Transportation and staging would temporarily increase local noise levels near sensitive receptors. The adverse impact is less than significant.

Mitigation N-1: No mitigation is required. Nevertheless, the Department of Fish and Game will provide liaison for nuisance complaints. The Department of Fish and Game and/or its transport coordinator will identify and provide a liaison person to respond to concerns of noise from transport and staging activities. Procedures for reaching the liaison via telephone or in person will be included in notices distributed and posted in accordance with the previous measure. Nuisance complaints filed with the liaison and the approach used to resolve the complaint will be reported to the Department of Fish and Game and/or the U.S. Forest Service as appropriate.

Airboat Operation

Airboats may be used to apply rotenone to Lake Davis in areas where other watercraft cannot access due to shallow areas. Airboats can generate noise levels of over 100 dBA at 50 feet, and routinely operate at 90 dBA. Some attenuation can be expected due to the vegetation and reservoir surface; however, impacts to nearby receptors are likely.

Impact N-2: Operating airboats would increase local noise levels during chemical application. The adverse impact is significant but mitigable.

Mitigation N-2: Airboat operators would be prohibited from operating the vessels at high power, and the Department of Fish and Game shall implement feasible and appropriate measures to ensure this with written operating procedures. These measures would ensure that the proposed airboats use the lowest speed and power setting necessary for the effective application of rotenone. The Department of Fish and Game shall respond to complaints of noise from airboat operations during rotenone application. Complaints filed with the Department of Fish and Game and the approach used to resolve the complaint shall be reported and logged.

Significance After Mitigation: Less than significant.

Neutralization

Neutralization at the base of the dam may require stationary generators/engines to drive an electric submersible pump conveying rotenone-treated creek water to holding tanks for potassium permanganate treatment, and/or back to the reservoir. Sensitive receptors near the dam may be impacted during neutralization.

Impact N-3: Generators/engines at neutralization below the dam would increase noise levels near sensitive receptors. The adverse impact is significant but mitigable.

Mitigation N-3: The Department of Fish and Game shall properly maintain and tune engines of all pumps and maintain properly functioning mufflers on all internal combustion engines (tanker trucks) to minimize noise emissions. The Department of Fish and Game or its designee shall respond to complaints of noise caused by neutralization station operations in accordance with mitigation measures. Complaints filed with a designee and the approach used to resolve the complaint shall be reported to the Department of Fish and Game.

Significance After Mitigation: Less than significant.

Supplemental Pumping

Additional pumping may be required to drain and maintain the reservoir to the required elevation. The pumps would be 88-hp electric submersible pumps that would discharge an average of 10 cfs each over the anticipated range of reservoir water levels during drawdown. The pumps would be located in the reservoir. The pumps would be powered by trailer-mounted diesel generator sets located near the spillway. One 350 kw generator would be required for every three pumps. It is not possible to determine if any supplemental pumping would be required prior to commencement of the project.

A typical 350 kw generator at full load results in a noise level of 56 dBA at 50 feet. Because this level is below the noise level of airboat operation (90 to 100 dBA at 50 feet or approximately 84 to 90 dBA at 1 meter), and considering the other equipment proposed for use, it is not expected that supplemental pumping would result in any significant impact to noise.

6.2.5 Alternative A – 15,000 Acre-Feet (Plus Treatment Including Powder)

Noise impacts and mitigation measures are the same as those indicated above for the Proposed Project/Proposed Action.

6.2.6 Alternative B – 5,000 Acre-Feet (Plus Treatment)

Alternative B requires dewatering Lake Davis to an elevation of 5,738 feet.

Noise impacts and mitigation measures are the same as those indicated above for the Proposed Project/Proposed Action.

6.2.7 Alternative C – 35,000 Acre-Feet (Plus Treatment)

Noise impacts and mitigation measures are the same as those indicated above in Section 6.2.4, Proposed Project/Proposed Action.

6.2.8 Alternative D – 48,000 Acre-Feet (Plus Treatment)

Noise impacts and mitigation measures are the same as those indicated above in Section 6.2.4, Proposed Project/Proposed Action. Supplemental pumping would not be required for Alternative D.

6.2.9 Alternative E – Dewater Reservoir and Tributaries (No Chemical Treatment)

Alternative E does not include the use of rotenone or neutralization chemicals. The impacts associated with the rotenone transport and treatment would not be experienced under this alternative. However, some of the same equipment would be used as is anticipated in the Proposed Project. Therefore some of the same impacts would apply. No boats would be used for the purpose of rotenone treatments. However, a limited number of boats may be used for other purposes under Alternative E. Noise impacts associated with implementation of Alternative E, include pipeline construction, pumps/generators operation, and helicopter use to transport pumps to the area at or near the dead pool. Implementation of this alternative presents the greatest noise impact potential due to transportation/hauling and staging, pipeline construction, operation of any pumps/generators associated with dewatering, and use of helicopters to transport pumps to the area below the dead pool.

6.2.9.1 Pipeline Construction Noise

Noise impacts from pipeline placement/construction have the potential to result in a significant adverse impact. Pipeline installation would be required to completely dewater the

reservoir below dead pool levels (at approximately 107 acre-feet and well below the levels for the other alternatives). If this alternative is selected, detailed construction plans would be prepared for Alternative E.

Impact N-4: Construction noise associated with the pipelines proposed for Alternative E would impact sensitive receptors during pipeline, pump, and generator placement/installation. The adverse impact is significant but mitigable.

Mitigation N-4: The Department of Fish and Game shall properly maintain and tune engines of all pipeline construction equipment and maintain properly functioning mufflers on all internal combustion engines to minimize noise emissions associated with the pipeline.

For construction, the Department of Fish and Game shall ensure that all noise generated from construction-related equipment and activity complies with applicable Plumas County and U.S. Forest Service noise standards. If the Department of Fish and Game determines that the noise standards may be exceeded, the Department of Fish and Game shall obtain a variance or other authorization from the applicable regulating agency. Noise standards may be exceeded based on the technical feasibility of a measure to reduce noise (technical feasibility would take into consideration cost, availability, and the overall project objectives).

Compliance during planning and construction shall be monitored by the Department of Fish and Game or by a Department of Fish and Game-approved construction monitor.

Significance After Mitigation: Less than significant.

6.2.9.2 Pumps and Generators

Complete dewatering of Lake Davis and tributaries would require pipeline construction and temporary use of pumps driven by electric motors powered by gasoline or diesel generators to remove water at the lowest levels adjacent to the dam.

Impact N-5: Operation of pumps and generators associated with dewatering would impact sensitive receptors. The adverse impact is significant but mitigable.

Mitigation N-5: The Department of Fish and Game shall implement a telephone hotline which members of the public can use to relay concerns regarding the project, including issues associated with noise. The Department of Fish and Game shall respond to complaints of noise caused by pump(s) and/or generators during dewatering under Alternative E. The Department of Fish and Game shall investigate the complaint by measuring noise levels at the perimeter of the work area or adjacent to sensitive receptors to determine if noise levels exceed levels identified in Section 6.2.4.1 for various equipment. In the event that expected noise levels are exceeded, the Department of Fish and Game shall implement feasible and appropriate measures such as scheduling system maintenance, replacement, and/or adjustments, to address the complaint. Complaints filed and the approach used to resolve the complaint shall be reported to the Department of Fish and Game and/or U.S. Forest Service.

Significance After Mitigation: Less than significant.

6.2.9.3 Helicopter Noise

A Single Event Noise Exposure Level (SENEL) is the maximum sound level produced by an individual approach overflight at a particular measuring point. The SENEL describes the

event's mean energy level and involves the time duration of the event. According to the Airport Land Use Handbook, for most aircraft noise events SEL/SENEL is about five to 10dB(A) higher than Lmax; the shorter the noise event is, the closer the two numbers will be. The SENEL compares to the CNEL as follows (Reid-Hillview 2006):

- 1 event/day @ 114.4 SEL = CNEL 65
- 10 events/day @ 104.4 = CNEL 65
- 100 events/day @ 94.4 = CNEL 65

Helicopter use is specified under Alternative E to transport equipment to areas inaccessible to ground transportation. Helicopters would not be used for the tributaries but would be used for access to the reservoir if conditions were too muddy for land or water vehicles. If used, they would be primarily in the southern third of reservoir where there may have been borrow pits for the dam construction, or in the dead pool area. Helicopters would be used for placing and removing pumps or other equipment that are too large to handle any other way. A potential staging area for the helicopter would be the meadow near the dam spillway or possibly the DWR pull-out at the dam. Contract, not USFS, helicopters would be used, as this would be during fire season and the USFS helicopters could not be relied upon for service because fires would be the first priority

Up to 20 hours of flight time is proposed in the project area. Flights into and out of the project area would avoid overflights of sensitive receptors by using the length of the reservoir bed as much as possible. If helicopters were maintained at a distance of at least 1,500 feet from sensitive receptors (including all project personnel and any member of the public), helicopter noise would not cause a substantial increase in noise levels or cause a significant disturbance due to relative short durations (Spartina 2003). Using helicopters only for transporting equipment/pumps to areas inaccessible to ground transportation would limit the duration of high noise levels associated with generating lift during ingress, hovering, and egress to less than 30 minutes. The campgrounds and boat launching areas located near the dam may be impacted during these short periods. Flight paths over the Lake Davis Resort and populated area west and southwest of the dam may result in temporary, but significant impacts depending on overflight altitude. Flight paths should avoid known eagle nesting areas and other wildlife refuges where possible.

Impact N-6: Helicopter noise could impact sensitive receptors. The adverse impact is significant but mitigable.

Mitigation N-6: Establish flight paths away from or high above sensitive receptors to reduce noise to acceptable levels. Flights into and out of the project area would avoid overflights of sensitive receptors by using the length of the reservoir bed as much as possible. If helicopters were maintained at a distance of at least 1,500 feet from sensitive receptors, the relatively short duration helicopter noise would not cause a substantial increase in noise levels or cause a significant disturbance. If the 1,500-foot distance was not maintained noise levels would exceed those of other equipment being used for the project, including airboats and construction equipment.

Significance After Mitigation: Less than significant.

6.2.10 Cumulative Impacts

A cumulative impact is the impact on the environment that results from the incremental impact of the action when added to the impacts of other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes the other actions and regardless of land ownership on which the other actions occur. An individual action when considered alone may not have a significant impact, but when its impacts are considered in sum with the impacts of other past, present, and reasonably foreseeable future actions, the impacts may be significant.

6.2.10.1 Definition of Analysis Area

The analysis area used for the cumulative impacts analysis is the immediate vicinity around the Lake Davis National Recreation Area.

6.2.10.2 List of Projects Considered in the Cumulative Impacts Analysis

Previous, present, or future projects and actions listed in Section 1.8 that were considered in this cumulative impact analysis for noise include:

- Grizzly Ranch Development Project
- Forest Service Road 24N10 Chip Seal Project
- Timber Harvest Projects
- USFS Forest and Fuels Management Projects

This analysis describes the potential cumulative impacts of the Proposed Project and Alternatives A through E on noise when considered in combination with other past, present, and reasonably foreseeable actions and baseline conditions.

A brief description of the time period and likely impacts of other projects considered in this analysis is provided below.

6.2.10.3 Cumulative Impacts for the Proposed Action

Grizzly Ranch Development Project

The Grizzly Ranch Development Project is a residential subdivision that includes 380 homes on 1,042 acres, including a golf course. The project is currently underway. During the construction period there could be adverse noise impacts that, when combined with the noise impacts from the pike eradication project, could result in a significant impact to nearby sensitive receptors. These impacts would only occur if the construction process for both projects occurred simultaneously in 2007. However, because of the distance between the Grizzly Ranch Development Project site and the project site, even if the construction process for the Grizzly Ranch Development Project occurs simultaneously with the Proposed Project, there would be no cumulative impact.

If an alternative involving rotenone treatment were implemented, the area around the reservoir would be closed to public use. This in effect would limit the exposure of the public

to any potential noise issues. Noise impacts associated with all alternatives of the Proposed Project are short-term, while the Grizzly Ranch Development Project would have long-term noise impacts.

Forest Service Road 24N10 Chip Seal Project

The U.S. Forest Service, Plumas National Forest, Beckwourth Ranger District proposes to chip seal approximately 1.8 miles of the 24N10 road on National Forest land near the western shore of Lake Davis. The project, which includes culvert installations, clearing, crack sealing and asphalt patching, aggregate placement, and chip sealing, is scheduled for 2006. During the construction period there could be adverse noise impacts that, when combined with the noise impacts from the pike eradication project, could result in a significant impact to nearby sensitive receptors. These impacts would only occur if the construction process for both projects occurred simultaneously.

Due to traffic concerns, the chip seal project would not occur simultaneously with the Proposed Project. Therefore, there would be no cumulative impact. If an alternative involving rotenone treatment were implemented, the area around the reservoir would be closed to public use. This in effect would limit the exposure of the public to any potential noise issues. Noise impacts associated with all alternatives of the Proposed Project are short-term, while Forest Service road enhancements would have long-term noise impacts.

Timber Harvest Projects

Since the early 1900s and continuing to the present, there have been impacts of timber harvesting in the analysis area. Noise impacts could affect nearby sensitive receptors. However, mitigation measures in place for harvest projects are expected to control noise levels. The cumulative impact of timber harvest projects is less than significant.

If an alternative involving rotenone treatment were implemented, the area around the reservoir would be closed to public use. This in effect would limit the exposure of the public to any potential noise issues. Noise impacts associated with all alternatives of the Proposed Project are short-term, while timber harvest projects would have long-term noise impacts.

USFS Forest and Fuels Management Projects

In addition to timber harvest projects, the USFS conducts forest and fuels management activities in the analysis area. This includes reduction in fire hazard through tree removal, thinning for forest health, salvage cutting, pole cutting, tree planting, public fuel wood-cutting, and prescribed burns. These types of activities have occurred since approximately 1980, with impacts similar to the timber harvest impacts. There could be adverse noise impacts that, when combined with the noise impacts from the pike eradication project, could result in a significant impact to nearby sensitive receptors. These impacts would only occur if these activities occurred at the same time as the pike eradication project. The cumulative impact of USFS forest and fuels management projects is less than significant.

If an alternative involving rotenone treatment were implemented, the area around the reservoir would be closed to public use. This in effect would limit the exposure of the public to any potential noise issues. Noise impacts associated with all alternatives of the Proposed

Project are short-term, while ongoing management activities would have long-term noise impacts.

6.2.10.4 Cumulative Impacts Analysis for Alternative A

Cumulative impacts of Alternative A are the same as for the Proposed Project.

6.2.10.5 Cumulative Impacts Analysis for Alternative B

Cumulative impacts of Alternative B are the same as for the Proposed Project.

6.2.10.6 Cumulative Impacts Analysis for Alternative C

Cumulative impacts of Alternative C are the same as for the Proposed Project.

6.2.10.7 Cumulative Impacts Analysis for Alternative D

Cumulative impacts of Alternative D are the same as for the Proposed Project.

6.2.10.8 Cumulative Impacts Analysis for Alternative E

Cumulative impacts of Alternative E are the same as for the Proposed Project.

6.2.10.9 Conclusion

Under the Proposed Project and all of the project alternatives, the combined impact of past, present, and reasonably foreseeable projects with the project/action alternatives would not result in cumulative impacts for noise in the Lake Davis area. There would not be cumulatively considerable impacts, since most of the relevant projects described above would not occur simultaneously with the eradication project. The Grizzly Ranch Development Project and the Forest Service Road 24N10 Chip Seal Project may cause an increase in construction noise in the project area, however it is unlikely that these projects would occur at the same time as the pike eradication project. Due to the short timeframe of the Proposed Project, it is not likely to coincide with any of the projects discussed under the Cumulative Impacts section.

6.2.11 Environmental Impacts Summary

A summary of noise impacts for all alternatives is provided in Table 6.2-1. Alternative E has more significant and adverse impacts than the other project alternatives.

Table 6.2-1. Summary Comparison of Impacts of Alternatives

Affected Resource and Area of Potential Impact	Alternative						
	No Project Compared to Existing Conditions	Proposed Action	A	B	C	D	E
Noise							
1. Transportation and Staging	N	LS,A	LS,A	LS,A	LS,A	LS, A	LS, A
2. Airboat Operation	N	SM, A	SM, A	SM, A	SM, A	SM, A	SM, A
3. Neutralization Stations	N	SM, A	SM, A	SM, A	SM, A	SM, A	na
4. Construction Noise	N	N	N	N	N	N	SM, A
5. Pumps and Generators	N	N	N	N	N	N	SM, A
6. Helicopter Noise	N	N	N	N	N	N	SM, A

Key:

A = Adverse Impact (NEPA)

B = Beneficial Impact (NEPA)

LS = Less than Significant Impact (CEQA)

N = No Impact (CEQA, NEPA)

na = Not Applicable

SM = Significant but Mitigatable Impact (CEQA)

6.2.12 Monitoring

No monitoring activities are proposed for noise.